

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

03 DEC 2004

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
18 December 2003 (18.12.2003)

PCT

(10) International Publication Number
WO 03/103791 A2

(51) International Patent Classification⁷: A63H 1/00

(21) International Application Number: PCT/GB03/02418

(22) International Filing Date: 3 June 2003 (03.06.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0212919.5 5 June 2002 (05.06.2002) GB

(71) Applicant and

(72) Inventor: DUFORT, John, Francis [GB/GB]; Unit 3b
Trenant Industrial Estate, Wadebridge, Cornwall PL27
6HB (GB).

(74) Agent: HOWE, Steven; Lloyd Wise, Commonwealth
House, 1-19 New Oxford Street, London WC1A 1LW
(GB).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

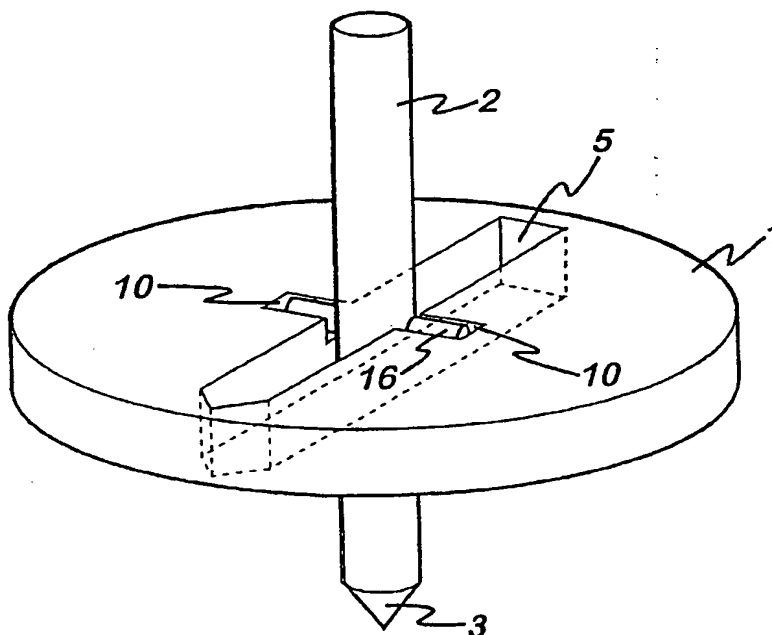
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: NOVELTY ITEM



(57) **Abstract:** A spinning top has a body (1) and a stem (2), whereby the stem (2) is movable between a first position in which it lies substantially parallel to the body (1) and a second position in which it extends through an opening (5) formed in the body (1), in a direction generally perpendicular to the body (1). Preferably, when the stem (2) is in the first position it is carried on or in the body (1).

WO 03/103791 A2

NOVELTY ITEM

This invention relates to novelty items, and particularly to spinning tops.

Various spinning tops are known in the art.

- 5 A simple form of spinning top, that is typically made from wood, comprises a generally conical body portion, typically with a stem extending co-axially away from the side opposite the pointed end of the body. Such spinning tops are spun by resting the pointed end of the body on a surface, and imparting spin by twisting the stem and thereby twisting the body. Such spinning tops tend to be large and costly to manufacture. The size of such spinning tops limits their use as a give-away novelty item.

- Other spinning tops are known which have greater complexity. These may include a number of moving components such as washers and bearings. Each component has to be separately formed, often from different materials.
- 15 Consequently, the assembly process involves a series of steps. The cost to produce these toys is therefore relatively expensive. This limits their use as give-away novelties.

- Spinning tops are also known that comprise a generally planar, disk like body, and a stem extending generally perpendicular to the plane of the body. One end of the stem has a pointed end, and is designed to rest on a surface on which the spinning top is to spin. The other end of the stem, which extends on the opposite side of the body to the pointed end, is provided to allow a user to impart spin to the spinning top. Such spinning tops are generally molded as unitary items. Since the stem is typically rigid, the ends of the stem may pierce and damage the membrane of the packaging in which they are stored.
- 25 Further, the stem may cause injury to someone handling or using the toy. This is a particular problem where the spinning top is to be given away as a

promotional novelty item in, for example, cereal packets or crisp packets. The stem may damage the membrane of the package in which it is contained and thus contaminate the cereal or crisps.

5 US 2945696 discloses a match book spinner, wherein a match can be separated from a book of matches and the end of the match fed through apertures formed in the front and rear covers. In this way, the match is retained in a position substantially perpendicular to the plane of the book, and the match book can be spun on the match. The match book spinner has the disadvantage that, as matches are removed, the weight distribution of the
10 book varies and results in uneven spinning. Further, although new matches can be separated from the match book to act as stems, when all the matches have been used, the match book is discarded.

The present invention relates to a spinning top comprising a body and a stem, the stem being movable between a first position in which the stem lies
15 substantially parallel to the body and a second position in which the stem extends through the body, in a direction generally perpendicular to the body. The body is formed with an opening through which the stem extends in the second position.

In the first position, the stem and body are compact for storage. The risk of
20 damaging the packaging in which the spinning top is contained or injuring a user is minimised as the ends of the stem do not extend significantly beyond the body. In this way, the spinning top may be stored in a substantially flat configuration. This has the advantage that little space is required to store the spinning tops and also that the tops may be transported, for example in a
25 child's bag, very easily. Advantageously, the toys of the present invention, with the stem in the first position, can be stacked one upon the other, since the shape can be less bulky or irregular. Also, the spinning top can be

packaged in the first, flat, configuration, and so the packaging required can be very simple, like an envelope, minimising the cost.

In the second, operative, position, the stem is generally perpendicular to the body, and provides a first end on which the spinning top is supported and can rotate, and a second end which can be acted upon to impart spin to the spinning top.

The opening through which the stem extends in the second position is preferably provided generally through the centre of mass of the body to balance the body during rotation. This ensures optimum spinning of the spinning top.

In the first position, the stem may be carried on the body. Advantageously though, the stem is at least partially received within the body, and preferably is entirely received within the body in the first position. This has the advantage that the stem can be accommodated in the body of the spinning top and therefore the ends of the stem cannot pierce the packaging or cause injury when not in use.

The body may be formed with a recess to at least partially receive the stem.

In this way, the stem can be carried on or at least partially in the body in the first position, can be moved to the second position in use, and can then be moved back to the first position after use.

In one embodiment, the stem may be separable from the body. In going from the first position to the second position, the stem can be separated from the body and then inserted through the opening in the body. A significant advantage of this embodiment is that the spinning toy can comprise only two simple components. These components may be easily formed and assembled and therefore allow very cheap spinning toys to be produced.

The stem may have a variety of profiles. A circular profile allows a smooth twisting motion to be applied to the stem when in use. However, a non-circular profile, such as square or triangular, is particularly advantageous since this prevents rotation of the stem in the opening formed in the body and ensures that the rotational movement of the stem is transferred to the body. A square profile is particularly preferred for this reason, and also as this is easier to manufacture.

The profile of the stem may also vary along the length of the stem. For example, the stem may include a non-circular cross-section in the region received by the opening of the body, but with a circular cross-section in the region where the user imparts spin to the spinning top. The stem may be provided with a portion of larger cross-sectional area approximately half way along its length. In this way, the larger diameter portion may abut the body as the stem is pushed through the opening in the body to correctly position the stem with respect to the body in the second configuration.

The stem optionally has arms protruding from its sides to form a cross shape. When the stem is in the second position, the arms may be received in a recess formed in the body. This further ensures that the rotation imparted to the stem is passed to the body of the toy. A particular advantage of using a cross-shaped stem is that the risk that the stem may be swallowed by children is reduced and if the stem is swallowed, this will not block the airway.

In an alternative embodiment of the invention, the stem is pivotally mounted to the body. In this case, the body may include an opening through which the stem moves when moving between the first and second positions. This arrangement may allow the stem to be moved from the first position to the second position, and similarly from the second position to the first position, without the need to separate and reassemble components. This lowers the

risk that a component, particularly the stem, may be swallowed, and also reduces the likelihood of losing components.

A pivot pin connecting the stem and the body may be provided on the stem and received in recesses formed in the body so that the stem is removable
5 from the body. The stem may be more permanently attached to the body by, for example, providing each recess with a lip to lock the arms in the recess.

Alternatively, two pivot pins are provided, each in the form of a bridge which may be connected at one end to the body and at the other end to the stem. In moving the stem from the first position to the second position the pivot pins
10 can be twisted along their length. This arrangement has the advantage that the body and stem of the spinning toy can be made in one piece, for example by injection molding, and therefore requires no assembly. A spinning top made in such a way can be very cheap and easy to produce.

The pivot pins may be attached to the stem nearer to one end of the stem
15 than the other such that, in the second position, the portion of the stem which extends below the body can be different to the portion of the stem which extends above the body. In this way, the stem can be prevented from rotating more than 180° from the first position since the opening in the body is shorter on one side of the pivot point than on the other. This can prevent the pivot
20 pins being twisted to the extent that they are broken.

The spinning top optionally further comprises an outer element formed with a hole generally in its centre. The outer element may be removably mounted on either the top or bottom of the body, so that, when the stem protrudes through the body in the second position, the stem may protrude through the hole in the
25 outer element. In this case, the outer element can prevent the stem moving back towards the first position, for example during use of the spinning top. Preferably, two outer elements are provided, one of which may be mounted

on the top of the body and the other of which may be mounted on the bottom of the body.

In the embodiment where pivot pins are fixedly attached to both the body and the stem, the provision of at least one outer element is beneficial to prevent
5 the stem moving from the second position to the first position when the spinning top is in use.

Though the outer elements may have a variety of shapes, it has been found that a thin circular disk achieves particularly good results, both aesthetically and mechanically.

10 The outer elements may cover only a small portion of the top or bottom of the body, though it is preferred that they extend over the majority of the top or bottom of the body. In this way, the outer elements can provide a casing for the body and stem when in the first position.

The body may be formed with means to attach the outer elements thereto.
15 For example, an inwardly turned lip or flange may be provided around the edge of the body in which the edge of the outer element may slot.

Preferably, the outer elements are formed from a resilient material, such as cardboard or plastic to enable them to be easily slotted into position on the body and be easily removed.

20 Alternatively or additionally, the stem or the pivot pins may be formed with one or more latch portions which can engage the body when the stem is in the second position. This can prevent the stem unintentionally moving from the second position to the first position, or vice versa. Preferably, the latch portions formed on the stem or the pivot pins engage one or more
25 corresponding latch portions formed on the body. It is particularly preferred that each pivot pin is formed with two latch portions which engage the corresponding latch portions on the body.

A spinning toy formed with one or more latch portions in this way can be safer than known spinning toys. As mentioned above, when the stem is in the second position it is generally perpendicular to the body. When pressure is applied to the spinner, for example if a user falls, or places his hand on the
5 toy, the pressure applied can cause the stem to move from the second position to the first position. Injury to the user, and also damage to the toy, can therefore be minimised or avoided.

In any of the above cases, the stem may be provided with a rounded, pyramidal or other pointed tip to reduce the area in contact with the surface on
10 which the spinning top spins when in use. Preferably each end of the stem has a rounded, pyramidal or other pointed tip. This means that a reduced area tip can be provided to contact the surface irrespective of the orientation of the stem. This makes movement to the second position easier.

The body of the toy may have a variety of shapes, such as three dimensional
15 cubes, spheres or other shapes. However, it is preferred that the body be substantially planar, a body in the shape of a circular disk or polygonal shape being particularly favourable. For packaging purposes it is preferred that the toy can fit in a package having dimensions of about 40 mm x 40 mm.

The components of the spinning toys described above may be formed from
20 plastic, wood or cardboard, for example, or a combination thereof. In this way, the components can be very cheap to produce. It is further preferred that the components are injection moulded. This allows spinning toys of a variety of shapes and with patterns or decoration to be easily formed.

The spinning tops may be formed with patterns, for example frills or teeth
25 around the circumference of the body.

The stem of the spinning tops described above may be formed with a handle portion. This can aid the application of a rotational force to the toy. A logo or

pattern may be printed on the handle, or ribs may be formed so as to provide a grip.

Examples of the present invention will now be described in accordance with the accompanying drawings, in which:

- 5 Figure 1 shows a top view of a spinning top with the stem in a first position;
- Figure 2 shows an exploded perspective of a spinning top with the stem in a second position;
- Figure 3 shows a side view of a spinning top with the stem in the second position;
- 10 Figure 4 shows a side view of a variation of the spinning top shown in Figure 3;
- Figure 5 shows a top view of a spinning top according to a second embodiment of the invention;
- Figure 6 shows a perspective view of a spinning top according to a second
- 15 embodiment of the invention with the stem in the second position;
- Figure 7 shows an exploded view of a spinning top in the second configuration further comprising outer elements above and below the body; and,
- Figure 8 shows a perspective view of a spinning top with the stem in the first
- 20 position comprising outer elements;
- Figure 9 shows a top view of a spinning top having a body and stem which are molded in one piece;
- Figure 10 shows a perspective view of a spinning top having a body and stem which are molded in one piece;

Figure 11 shows a perspective view of another spinning top.

The spinning top shown in Figure 1 comprises a planar circular body 1 and a stem 2 formed with arm portions 6 resulting in a cross-shape. The spinning toy is shown with the stem 2 in the first, inoperative position, whereby the stem 2 is received within a cross-shaped recess 4 in the body. The plane of the stem 2 is parallel to that in which the body 1 lies. Each end of the stem 2 is formed with a rounded pointed tip 3. The two components of the toy are both formed with injection molded plastics.

In going from the first position to the second position, the stem 2 is removed from the recess 4 formed in the body and then arranged to be generally perpendicular to the body 1, as shown in Figure 2. In Figure 2, each end of the stem 2 is shown to have a pyramidal tip 3. One end of the stem 2 is then inserted into the hole 5 formed through the body 1, as shown by the dashed line in Figure 2. Since each end 3 of the stem 2 is pointed, any of these may be chosen to be inserted into the hole 5 through the body. When the stem 2 is positioned in the hole and, therefore when the stem 2 is in the second position, the arms 6 of the stem 2 are again received in the recess 4 in the body 1.

The recess 4 is sized to partially receive the stem 2. Therefore, in both the first and second positions, the arm portions 6 of the stem 2 project slightly above the surface of the body 1, as can be seen in Figure 3. The recess 4 can alternatively be sized to fully receive the stem 2 so that the arm portions 6 do not protrude from the body 1, as can be seen in figure 4.

The spinning top is operable by gripping the vertical portion of the stem 2 and twisting this, for example between the user's thumb and forefinger. The stem 2 shown in Figures 1 to 4 has a square profile so as to prevent the stem 2 from rotating relative to the body 1.

The arms 6 are shown in the Figures to extend to the edge of the body 1. However, it is to be understood that they could be shorter, and still fulfil the same purpose. Similarly, the vertical portion of the stem need not extend to the edge of the body.

- 5 A second embodiment of the present invention is shown in Figures 5 to 8. Some components of the spinning top are similar to those described in relation to Figures 1 to 4.

As can be seen in Figures 5 and 6, an elongate opening 5 is provided through the body 1 of this spinning top and is shaped and sized to receive the stem 2.

- 10 The stem 2 is formed with pivot pins 16 which are pivotally connected to the body 1. In this embodiment, this is achieved by placing the pivot pins 16 in recesses 10 formed in the body. The stem 2 can therefore be easily rotated from the first, inoperative position to the second operative position.

- 15 Figure 7 shows a partially exploded view of the components of a spinning toy including two outer elements 7 formed from a resilient material. Each outer element is shaped to cover the majority of the spinning top. Both faces of the body 1 are formed with a flange 8 against which the edge of the respective outer element 7 abuts. In this way, the outer elements 7 are resiliently held in place on the body 1.

- 20 A hole 9 through the outer elements 7 is positioned so that the stem 2 can pass through the outer elements 7 when the toy is in the second configuration. The stem 2 is therefore surrounded by the outer elements 7. This prevents the stem 2 from pivoting from the operable position to the inoperable configuration during use.

- 25 Figure 8 shows the spinning top comprising outer elements 7 in the first configuration. The body 1 and the stem 2 of the spinning top are therefore neatly contained within the outer elements 7.

The outer elements 7 shown in the figure are made from cardboard, though thin plastic could also be used.

An alternative arrangement similar to that shown in Figures 5 to 8 is shown in Figures 9 to 11. The spinning top shown in Figure 9 has connecting members
5 or pivot pins 16 which are formed integrally with the body 1 and the stem 2. The pivot pins 16 extend across the opening 5 formed in the body. In this case, rather than the pivot pins 16 rotating with respect to the body 1 as in the second example, the pivot pins 16 twist, allowing the stem to move from the first to the second position.

10 An outer element 7 is then positioned over the top of the body 1 so that the stem 2 protrudes through the hole 9 formed therein. Alternatively or additionally, the outer element 7 may be positioned over the bottom of the body 1. The outer elements therefore ensure that, once moved to the second position, the stem remains in the second position.

15 The embodiment shown in Figure 11 has two latch portions 14 formed on each pivot pin 16. These latch portions 14 engage latch portions 15 formed on the body 1. In use, the latch portions 14, 15 prevent the stem 2 from rotating unintentionally between the first and second positions, or between the second and first positions.

20 The stem 2 can be moved between the first position and the second position by applying pressure thereto. For example, a user can intentionally move the stem 2 from the first position to the second position by causing the latch portions 14 on the pivot pins 16 to move over the latch portions 15 on the body 1. The stem 2 is then temporarily locked in the second position.

25 Similarly, a user can intentionally move the stem 2 from the second position to the first position by causing the latch portions 14 on the pivot pins 16 to move over the latch portions 15 on the body 1.

Additionally, the stem 2 can be moved from the second position to the first position in the event that a user falls, places his hand or places an object on the spinning toy. The pressure applied to the stem 2 causes the latch portions 14 on the pivot pins 16 to move over the latch portions 15 on the
5 body 1. In this way, damage to the toy or injury to the user is minimised or avoided.

In the example shown in Figures 9 to 11, one end 11 of the stem is shorter than the other end 12. In moving from the first position shown in Figure 9 to the second position shown in Figures 10 and 11, the stem 2 is rotated causing
10 the pivot pins 16 to twist. By providing the stem with ends of different length, this prevents the stem being rotated by more than 180°, and therefore prevents the pivot pins from being over-twisted and breaking.

It will be appreciated that features from the different examples may be used in combination.

CLAIMS

- 1 A spinning top comprising a body and a stem, the stem being movable
between a first position in which the stem lies substantially parallel to the body
and a second position in which the stem extends through an opening formed
5 in the body, in a direction generally perpendicular to the body.
- 2 A spinning top according to Claim 1, wherein the opening through
which the stem extends in the second position is provided generally through
the centre of mass of the body.
- 3 A spinning top according to Claim 1 or Claim 2, wherein the stem is
10 carried on the body in the first position.
- 4 A spinning top according to Claims 1 or 2, wherein the stem is at least
partially received within the body in the first position.
- 5 A spinning top according to Claim 4, wherein the stem is entirely
received within the body in the first position.
- 15 6 A spinning top according to any previous claim, wherein the stem can
be moved back to the first position after use.
- 7 A spinning top according to any one of the previous claims, wherein the
stem is separable from the body.
- 8 A spinning top according to any one of the previous claims, wherein the
20 stem has arms protruding from its sides.
9. A spinning top according to any one of Claims 1 to 6, wherein the stem
is pivotally mounted on the body and the opening is sized so as to allow the
stem to move therethrough when moving between the first and second
positions.

10. A spinning top according to Claim 9, wherein a pivot pin is provided on the stem and is received in recesses formed in the body.
- 11 A spinning top according to Claim 9 or 10, wherein two pivot pins are provided, each in the form of a bridge connected at one end to the body and
5 at the other end to the stem.
12. A spinning top according to any previous claim, further comprising an outer element formed with a hole generally in its centre, which is removeably mounted on either the top or bottom of the body.
13. A spinning top according to Claim 12, whereby two outer elements are
10 provided, one of which is mounted on the top of the body, the other of which is mounted on the bottom of the body.
14. A spinning top according to Claim 12 or Claim 13 wherein the outer element is in the shape of a circular disk.
15. A spinning top according to any one of Claims 12 to 14, wherein the
15 outer element extends over the majority of the top or bottom of the body.
16. A spinning top according to any one of Claims 12 to 15, wherein the body is provided with a lip or flange in which an edge of the outer element may be received.
17. A spinning top according to any one of Claims 12 to 16, wherein the
20 outer element is formed from a resilient material.
18. A spinning top according to any previous claim, wherein the stem or the pivot pins are formed with one or more latch portions which engage the body when the stem is in the second position.

19. A spinning top according to Claim 18, wherein the latch portions formed on the stem or the pivot pins engage one or more corresponding latch portions formed on the body when the stem is in the second position.
20. A spinning top according to any previous claim, wherein the profile of
5 the stem varies along the length of the stem.
21. A spinning top according to Claim 20, wherein the stem is provided with a portion of larger cross-sectional area approximately half way along its length.
22. A spinning top according to Claims 20 or 21, wherein the stem has a
10 circular profile.
23. A spinning top according to Claims 20 or 21, wherein the stem has a non-circular profile.
24. A spinning top according to any previous claim, wherein the stem is provided with a rounded, pyramidal or other pointed tip.
- 15 25. A spinning top according to Claim 24, wherein each end of the stem has a rounded, pyramidal or other pointed tip.
26. A spinning top according to any previous claim, wherein the stem is formed with a handle portion.
27. A spinning top according to any previous claim, wherein the body is a
20 substantially planar circular disk.
28. A spinning top according to any previous claim, wherein the components are formed from a plastics material.

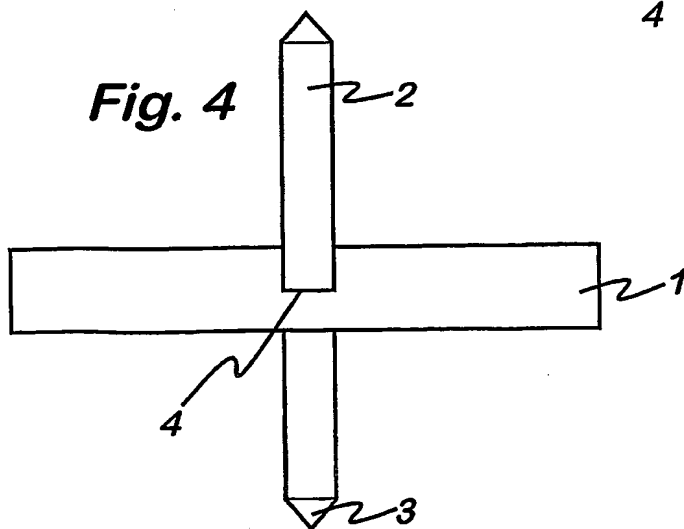
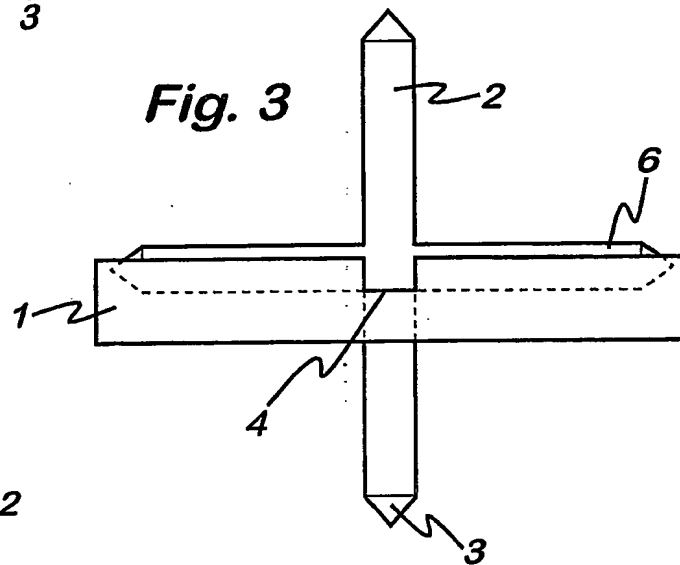
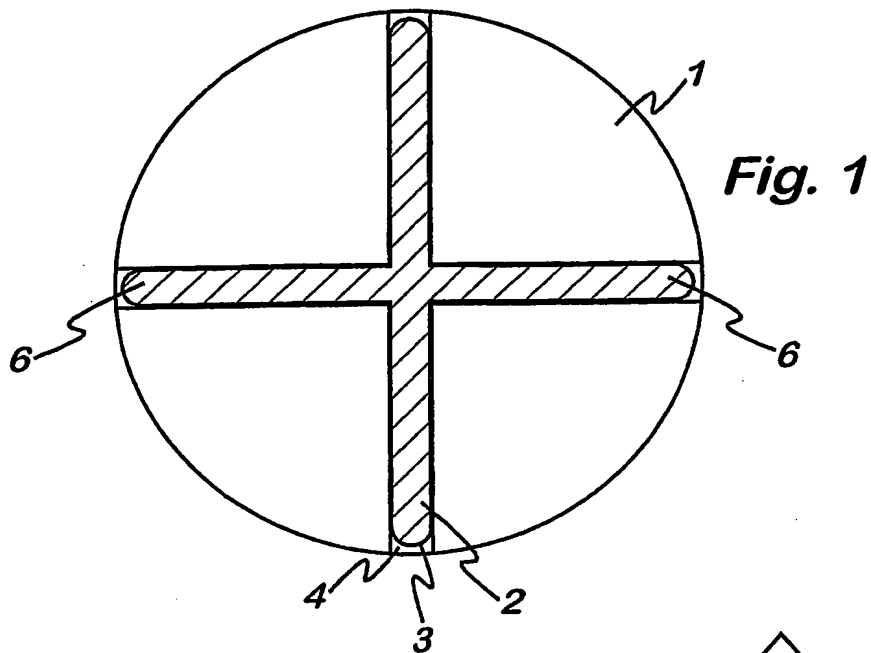


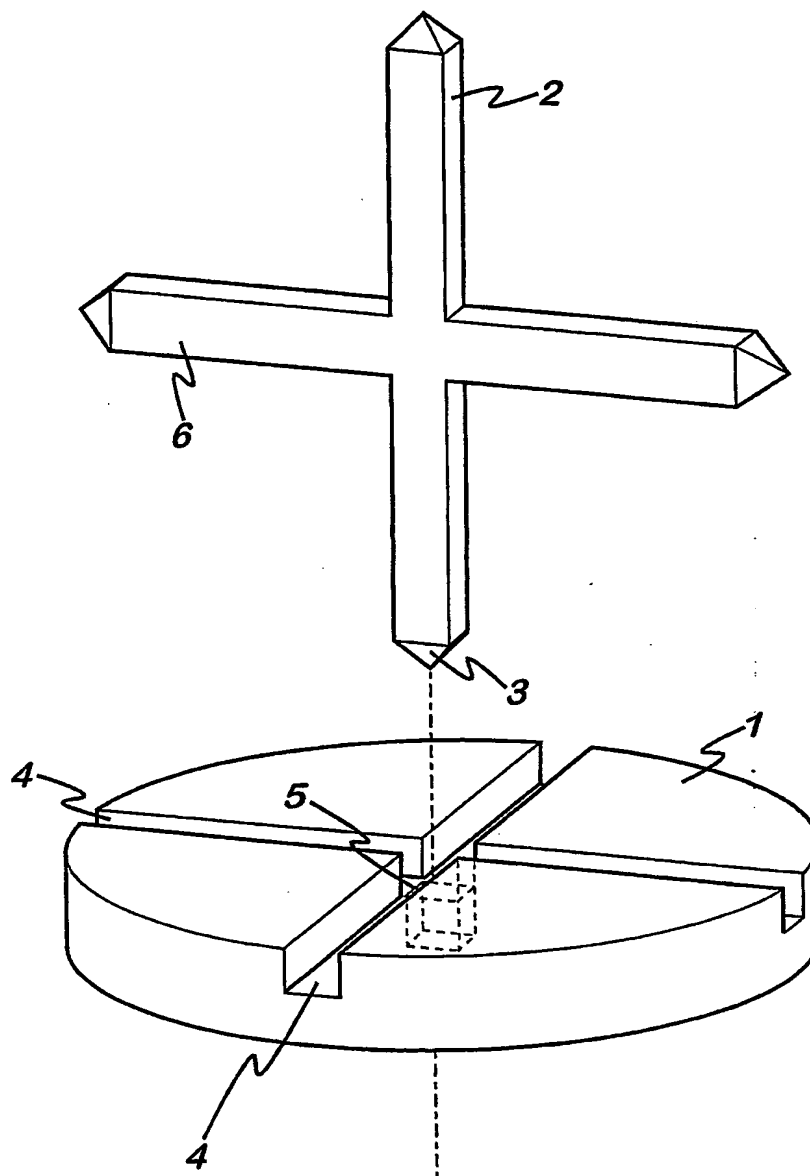
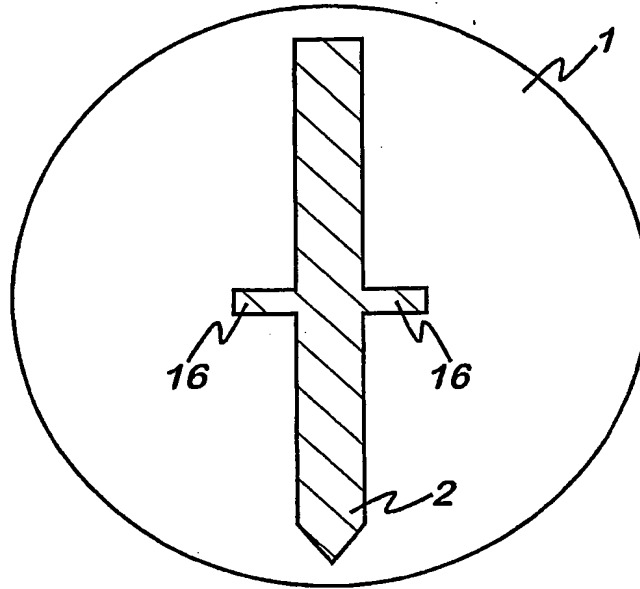
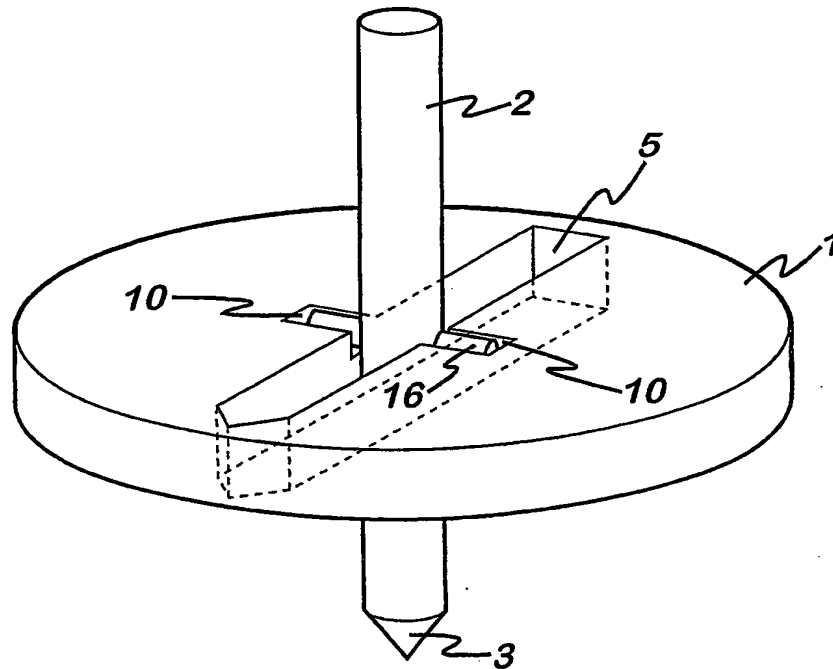
Fig. 2

Fig. 5**Fig. 6**

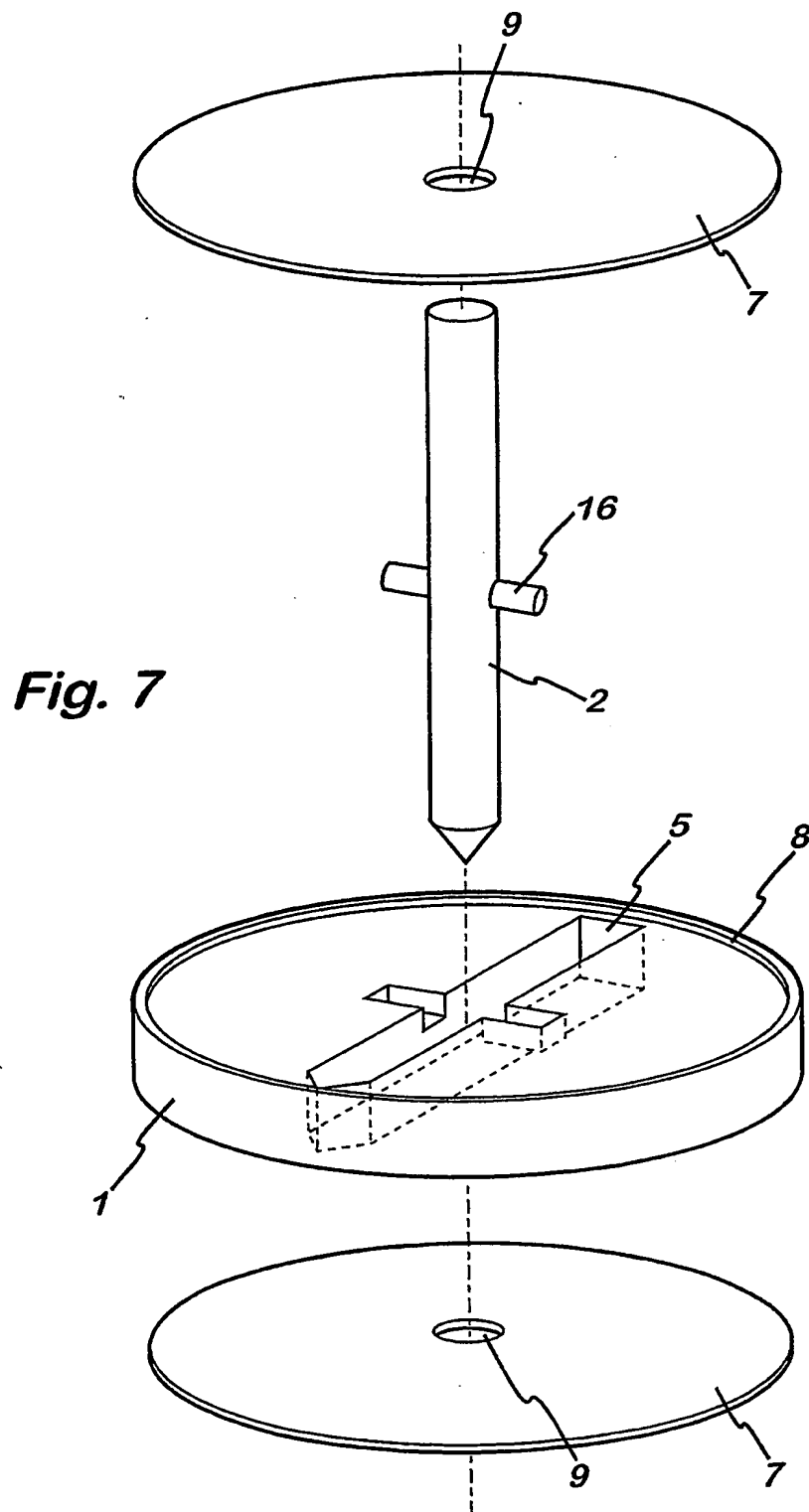


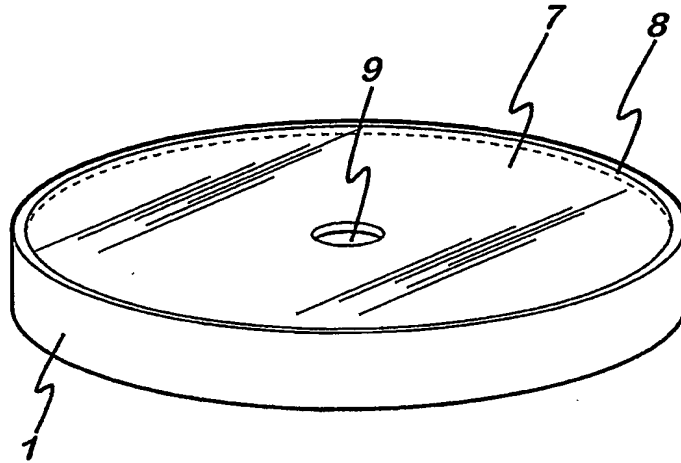
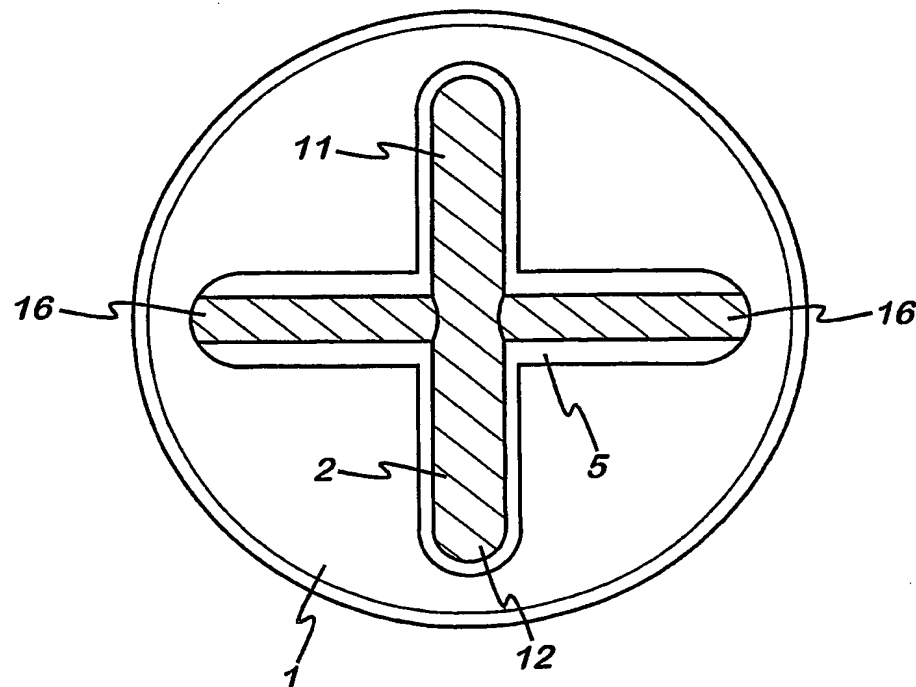
Fig. 8**Fig. 9**

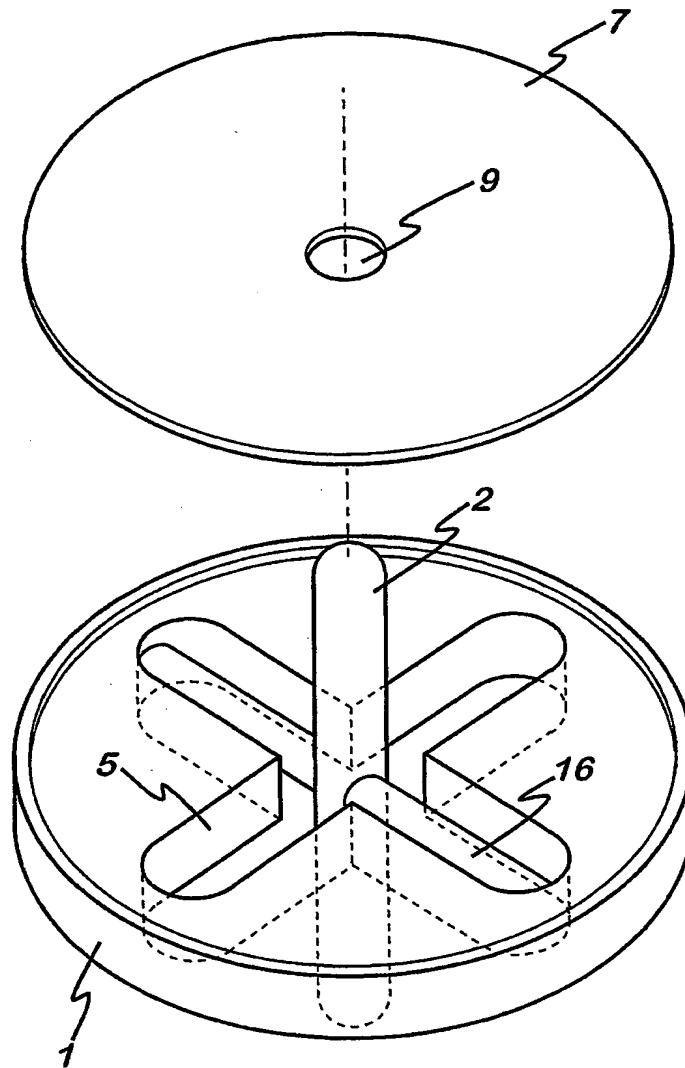
Fig. 10

Fig. 11

